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2-2-06
Date

Dora Rios
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:)	
Rodney L. Pettis)	Confirmation No. 9813
)	
Serial No.: 10/760,337)	Examiner: Hon, Sow Fun
)	
Filed: January 20, 2004)	Group Art Unit: 1772
)	
For: ELASTOMER AND POLYOLEFIN)	Attorney Docket No. 025635.0011.042.
RESIN BASED FILMS AND)	
ASSOCIATED METHODS)	

DECLARATION UNDER 37 CFR 1.132

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

I, Rodney L. Pettis, state the following:

1. I am the inventor of the above-identified patent application. I have been extensively involved in multilayered film and packaging manufacturing for over fifteen years. I have a Bachelor of Science in Mechanical Engineering (1986), and I am a Registered and Certified Professional Engineer in the State of South Carolina. I am a member of several Plastics and Packaging societies some of which include the Society of Plastics Engineers and TAPPI. I am the Director of Product Development for Exopack, LLC, which provides both consumer and performance paper and plastic for the flexible packaging materials and solutions market. In this capacity, I am responsible for new product developments of the company and for formulating

strategic plans, providing input into marketing and sales, and directing the technical resources for the Consumer Plastics division of the company.

2. I am familiar with and understand the subject matter of the above-identified patent application ("Pettis Patent Application"). I have studied the application and the amendments to the application, and have also reviewed the recent Official Action dated December 1, 2005, by the United States Patent and Trademark Office and the art cited therein.

3. Specifically, I have read and studied U.S. Patent No. 5,219,666 (hereinafter "Schirmer et al.") attached as Exhibit A and I have read and studied U.S. Patent No. 3,580,380 (hereinafter "Phillips") attached as Exhibit B. It is my opinion that the claimed invention, Claims 1-35 of the above-identified patent application, would not be obvious to one of ordinary skill in the art at the time this application was filed.

4. I, however, also offer the following more detailed comments on these issues as well:

4a. Present Claimed Invention: The present claimed invention, Claims 1-35, advantageously provides a packaging film and packaging film-product combination having enhanced optical and mechanical properties that is not easily punctured and that allows a product surrounded by the packaging film to be seen more clearly. The packaging film includes a polyolefin core, e.g., low-density polyethylene or ethylene vinyl acetate, having enhanced optical and mechanical properties and a high melt index positioned, between elastomer outer layers, e.g., styrene butadiene copolymer, that is unique and operationally quite different than other packaging films I have seen before and as set forth in the patent documents attached as Exhibits A and B. Further, the combination of properties, low haze, high-gloss, high tensile modulus, high tensile strength, high dart impact strength, and biaxial shrinking, is a significantly different development in view of the cited patent documents. The present claimed invention offers a viable solution for providing an economical packaging film for securely restraining product that is relatively thin and has enhanced optical and mechanical properties.

4a1. Claims 1 and 15, for example, in part feature a packaging film comprising a first outermost layer of elastomer, a second inner layer of polyolefin overlying and abuttingly

contacting the first outermost layer of elastomer, and a third outermost layer of elastomer overlying and abuttingly contacting the second inner layer of the polyolefin so that the second inner layer of polyolefin is positioned between the first and the third outermost layers of elastomer and having enhanced optical and mechanical properties for a selected overall packaging film gauge thickness to allow the product to be seen more clearly through the packaging film and to increase modulus for the packaging film. Claim 27, for example, in part features packaging film comprising a first layer of a sheet of elastomer, a second layer of polyolefin having a first surface abuttingly contacting a first surface of the first layer of the sheet of elastomer, and a third layer of a sheet of elastomer abuttingly contacting a second surface of the second layer of polyolefin so that the second layer of polyolefin is positioned between the first and third layers of elastomer, the packaging film having a 45° gloss in a range of about 70% to about 110%. Claim 28, for example, in part features a packaging film comprising a first layer of a sheet of elastomer, a second layer of polyolefin having a first surface abuttingly contacting a first surface of the first layer of the sheet of elastomer, and a third layer of a sheet of elastomer abuttingly contacting a second surface of the second layer of polyolefin so that the second layer of polyolefin is positioned between the first and third layers of elastomer, and having a measurement of shrink in a transverse direction in a range of about 10% to about 60% and in a machine direction in a range of about 60% to about 90%, a tensile modulus in a range of about 50,000 psi to about 120,000 psi, and a tensile strength in a range of about 2000 psi to about 3500 psi. Other unique features are described in the dependent claims.

4b. The Structural Differences and Advantages over the Cited Prior Art.

4b1. The present claimed invention is among the most exciting products that Exopack has ever introduced for securely restraining products, e.g., packaging multiple cans as shown in FIG. 4 of the Pettis Patent Application. As noted in the background section of the Pettis Patent Application, prior to its teachings, there existed a need for a packaging film that is economical to produce, that can be manufactured on existing equipment without having to modify the equipment, that is relatively thin, that has good optical properties to allow the product to be seen easily through the packaging film, and that has good mechanical properties to allow the packaging film to withstand outward forces being applied to the packaging by the product

being contained without puncturing easily. Rather, Schirmer et al. both describes and claims a multilayer film useful as an overwrap material for trade retail cuts of meat or other food products in a supermarket or other retail environment and a multilayer film useful in forming labels or tamper evident bands for vessels such as bottles, cans, and the like. Though likely adequate as an overwrap (cover), label, or "tamper seal," the Schirmer film would not be satisfactory as a shrink-wrap film for securely restraining products. Note, shrink labels are not considered shrink-wrap film used for restraining products by those skilled in the art.

4b2. The Schirmer multilayer film is so different from Exopack's film that any similarity is an illusion. Specifically, the Schirmer et al. describes two general embodiments for a multilayer film. First, Schirmer et al. describes a multilayer (five-layer) film formed of a very low-density polyethylene (VLDPE) core, two styrene butadiene copolymer outer layers, and two intermediate polymeric adhesive layers each bonding the core layer to a respective outer layer. Second, Schirmer et al. briefly describes an alternative embodiment in which a multilayer film instead is formed of "a single layer of VLDPE" adhered to "a single layer of styrene butadiene copolymer," either "directly" forming a two-layer film or "by means of a polymeric adhesive layer" forming a three-layer film. The characteristics of the multilayer film depends upon the composition and thickness of each of the layers. In the two embodiments, Schirmer et al. describes using a VLDPE layer characterized by densities of generally between 0.880 and 0.915 grams per cubic centimeter, high molecular weight (relatively low melt index), and broad molecular weight distribution (relatively high flow rate ratio). The polyolefin used in the Exopack films is instead, for example, a non-linear ethylene ethyl acetate copolymers or non-linear ethylene homopolymers (low-density polyethylene) with densities generally greater than 0.920 grams per cubic centimeter and generally having a relatively higher melt index. For those with knowledge in the art, these are very different materials. VLDPE is used in the Schirmer film to enhance toughness and puncture properties, but would not be generally suitable for use in shrink bundling films without having to electronically crosslink the polymer. The Exopack film utilizes lower cost materials, LDPE or EVA, which are suitable for use in shrink bundling applications without the having to use expensive crosslinking processes.

4b3. The Schirmer et al. film is further described and characterized by having a monoaxial (single direction) shrink properties. The background section of the Schirmer et al. reference clearly states that the film was designed as a replacement for polyvinyl chloride stretch cling film or polyvinyl chloride bottle labels. As such, Shirmer et al. wants little to no transverse direction shrink and wants high machine direction shrink. The Exopack films instead are characterized by having a biaxial (two direction) shrink properties with transverse direction shrink preferably between approximately 25 to 65 percent and machine direction shrink preferably between approximately 60 to 90 percent. Biaxial shrink properties are extremely important feature of the shrink-wrap film claimed in the Pettis Patent Application. Schirmer et al.'s disclosure of its definition of monoaxially oriented films includes the provision that some incidental orientation in the transverse direction may exist, col. 6, lines 57-63. Such provision would not be interpreted by one skilled in the art to be a statement that the film is really (or is desired to be) biaxial.

4b3. As noted above, the characteristics of the multilayer film also depends upon the thickness of each of the layers. The Schirmer et al. five-layer film is described and also characterized by having each styrene butadiene copolymer outer layer at 13 percent of the film gauge thickness, the core (VLDPE) layer at 42 percent, and the two intermediate polymeric adhesive layers providing the remaining 32 percent. Claims 6 and 21, feature each outermost layer in a range of about 10% to about 25% and what can be described as a core polyolefin layer in a range of about 50% to about 80%. With respect to the alternate embodiment of the Schirmer et al. film (two-layer adhering directly or three-layer including an adhesive layer), the Schirmer et al. Patent does not in any way describe their relative thicknesses. Because the test data described in the Schirmer et al. Patent only applied to the five-layer embodiment, without experimental testing, the thicknesses and/or composition of the layers required to achieve results similar to that described with respect to the five-layer embodiment would be speculative. Note, the Schirmer et al. Patent does not describe a three-layer film having elastomer outer layers directly surrounding and in direct contact with and adherence to respective sides of a polyolefin layer. Without the benefit of the Pettis Patent Application, one skilled in the art would not have gleaned such a structure from the five-layer primary embodiment or the two/three-layer alternate embodiment, nor is there motivation to develop it.

4b4. As described above, because the Schirmer film is intended for use as an overwrap material, label, or tamper evident band, it need not include and does not describe the enhanced mechanical properties of the Exopack film. For example, according to embodiments of the present claimed invention, the Exopack multilayered film can include a tensile modulus 50,000 to 120,000 PSI (Claims 11, 23, 28), a tensile strength 2000 to 3500 PSI (Claims 12, 24, 28), and/or dart impact strength 300 to 1000 grams (Claims 14, 26, 35). Such requirements would not necessarily be a requirement for an overwrap material for retail meats, a label, or a tamper band which must readily break in order to not prevent a user from opening the vessel (bottle). Also, statement in the disclosure of a Patent related to multilayered films that the film has higher modulus to permit use with label manufacturing apparatus or excellent toughness would not be interpreted by those skilled in the art to be a statement or teaching of all ranges of tensile modulus, tensile strength, or dart impact strength even with respect to label film, much less with respect to shrink-wrap packaging film so that it could be readily used with packaging machinery at relatively high speeds. Correspondingly, one with knowledge of the art would not find these properties inherent or inherently disclosed in the Schirmer et al. Patent.

4b5. The Exopack multilayered film also has some significantly different optical properties over that of other films including that described in the Schirmer et al. Patent. For example, according to embodiments of the present claimed invention, the Exopack multilayered film can include enhanced optical properties including a 45 degree gloss in the range of about 70 to 110 percent (Claims 9, 22, 27, 33), haze in a range of about 1% to about 10% (Claims 7, 22, 32) for film having a gauge thickness typically between 0.5 to 3.0 mil (Claims 5, 20, 34), and/or indicia on shrink wrap packaging film so that the combination product and shrink-wrap packaging are more aesthetically pleasing (Claim 10). A statement in the disclosure of a Patent related to multilayered films that the film is ultra-clear and glossy would not be interpreted by those skilled in the art to be a statement or a teaching of all degrees of gloss or all ranges of haze or associated percentages. Correspondingly, one with knowledge of the art would not find these properties inherent or inherently disclosed in the Schirmer et al. Patent.

4b6. Advantages of the present invention over that of the Schirmer et al. reference are numerous. For example, the non-linear ethylene ethyl acetate copolymers or non-

linear ethylene homopolymers offer economic advantages to the manufacturer due to the low raw material costs. Biaxial shrink properties enhance restraining the products. The tensile modulus of between 50,000 to 120,000 PSI can allow the film to be used with packaging machinery at relatively high speeds. The tensile strength of between 2000 to 3500 PSI can allow the packaging film to withstand relatively heavy loads being placed on the film. The dart impact strength of between 300 to 1000 grams can help prevent the packaging film from being punctured by protruding objects or corners associated with the products being contained by the packaging film. The 45 degree gloss in the range of about 70 to 110 percent can make the packaging film shiny and the products being restrained easily seen through the packaging film, once heated. The haze in a range of about 1% to about 10%, especially for film having a gauge thickness typically between 0.5 to 3.0 mil, can make the packaging film clear and the products being restrained easily seen through the packaging film, once heated. The indicia on shrink wrap packaging film can serve to make the combination product and shrink-wrap packaging more aesthetically pleasing.

4c. Recognition of the Problem:

4c1. Schirmer et al. fails to recognize the problems addressed by the Pettis Patent Application and thus, fails to provide any solutions for such problems, which, of course, it fails to recognize. As noted previously, Schirmer et al describes a multilayer film useful as an overwrap material for trade retail cuts of meat or other food products in a supermarket or other retail environment and a multilayer film useful in forming labels or tamper evident bands for vessels such as bottles, cans, and the like. Thus, one skilled in the art would not be motivated to modify or combine the Schirmer film to produce the invention claimed by the Applicant. As described in the Pettis Patent Application, the inventors in the Pettis Patent Application recognized that the multilayer film configuration described in the Application would provide, for example, a shrink wrap packaging film that is economical to produce, can be manufactured on existing equipment without having to modify the equipment, is relatively thin, has good optical properties to allow a product to be seen easily through the packaging film, and has good

In re Patent Application of:
Rodney L. Pettis

Application No. 10/760,337

mechanical properties to allow the film to withstand forces being applied to the film without being easily punctured.

4d. Long Felt Need: As described in the background section of the Pettis Patent Application, and as observed by me, and based on my experience, there has been a long felt need to recognize the source of the problems and for a solution to the problems identified and addressed by the inventors in the Pettis Patent Application, especially in terms of providing the right amount of mechanical properties to properly restrain multiple products and optical properties to clearly view product labels for the products contained by the packaging film. Neither of the cited Patents provide a description thereof. This confirms and indicates to me that this long felt need was not met prior to the teachings in the Pettis Patent Application, including Claims 1-35.

4e. Attempts by Those Skilled in the Art to Fill the Unsatisfied Need: The Background section and para. [0049] of the Pettis Patent Application objectively describes attempts by those skilled in the art to the attempt to satisfy the long felt need. This includes the use of a combination of elastomer and polyolefin layers. Because Schirmer et al has not recognized the source of the problems, albeit because it was not trying to solve the same problems, it has also not provided an effective solution for restraining products.

5. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Sec. 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the publication or any patent issued thereon.

FURTHER DECLARANT SAYETH NOT.

Jan 18, 2006
Date

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